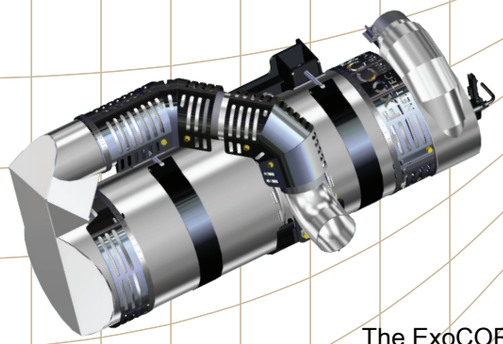
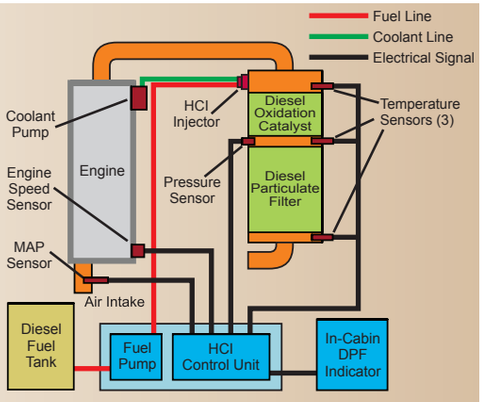
ExoCOR™ Active DPF System



System Overview

The Nett ExoCOR™ is an active diesel particulate filter system designed to control particulate emissions from diesel engines in on-road, off-road, and stationary applications. Active systems are not sensitive to variations in exhaust gas temperature and are a practical diesel particulate control solution for a variety of diesel engines. The particulate matter filtration efficiency of the Nett ExoCOR™ active diesel filter system exceeds 95%; HC and CO reductions are 80 to 90% respectively.

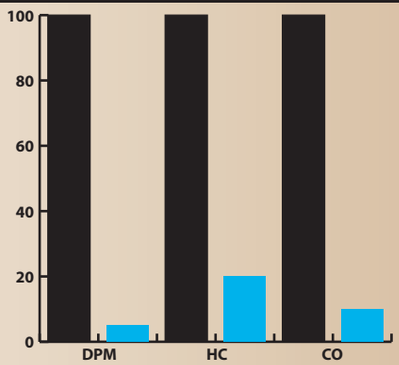
The ExoCOR™ system registers and measures various engine and system components in order to determine exactly when to activate the regeneration procedure. Regeneration is activated by injecting a precise amount of diesel fuel into the exhaust line which is then oxidized by a diesel oxidation catalyst (DOC). The exothermic reaction within the DOC raises the exhaust temperature to the diesel particulate filter (DPF) regeneration criterion level. The heated exhaust gas oxidizes the particulate matter (soot) accumulated on the particulate filter monolith. The estimated volume of soot trapped within the filter is calculated based upon the exhaust flow, engine load, back pressure, exhaust temperature, and the Soot Load Index (SLI).



The Nett ExoCOR™ ECU continuously monitors and measures the performance of all system sensors and components. Built-in safety features may halt regeneration based on factors such as vehicle speed, soot overload, and temperature. In the event of a malfunction, the ECU will indicate the existence of a problem to the operator via the dashboard indicator.

ExoCOR™ Control System

The ExoCOR™ Active DPF system features smart backpressure temperature profiling, and regeneration monitoring. Using the SLI the soot load of the DPF system can be calculated under all operating conditions. The complex calculations of the SLI are based on the pressure drop over the filter system compared to the exhaust gas flow through it.



The dashboard indicator displays the current SLI. The ExoCOR™ DPF system monitors the thermal counter which measures the temperature from the system's exhaust inlet. For active systems like the ExoCOR™, a low thermal count combined with a high SLI will activate the regeneration process.

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EADPF/En/1.3